UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/438,288	11/12/1999	CHENGKE SHENG	SC91189A	9114

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EXAMINER
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ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>10 April 2003</u> .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-3 and 7-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) <u>1-3</u> is/are allowed.

6) ☒ Claim(s) <u>7-14</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 4/10/2003 have been fully considered but they are not

persuasive.

2.   In response to applicant's arguments, the recitation 'receiver' has not been given

patentable weight because the recitation occurs in the preamble. A preamble is generally not

accorded any patentable weight where it merely recites the purpose of a process or the intended

use of a structure, and where the body of the claim does not depend on the preamble for

completeness but, instead, the process steps or structural limitations are able to stand alone. See

In re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152,

88 USPQ 478, 481 (CCPA 1951).

3.   The office traverses applicant's argument that Okamoto does not disclose that the same

PN code is multiplied with two different segments. Okamoto says in paragraph 400: "The signal

input from an input portion is correlated with the PN code at correlating portion 531, and output

as a correlated signal". Two different segments can enter 531 at two different time periods and

the same PN code will be used. Okamoto teaches that since the transmitter uses a PN generator,

the receiver's correlator has to use the same PN code to receive the correct message. The delays

that Okamoto shows in fig. 43 are after element 531.

Response to Amendment

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

5.   Claims 8-14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

6.   Claim 8 is grammatically incorrect where it recites in part "wherein each segment

corresponds to a different multi-path is representative of the predetermined time duration".

Either it should say 'wherein each segment, which corresponds to a different multi-path, is

representative of the predetermined time duration' or 'wherein each segment corresponds to a

different multi-path and is representative of the predetermined time duration' or 'wherein each

segment, corresponding to a different multipath, is representative of the predetermined time

duration'.

7.   Claims 9 to 14 depend on claim 8 and thus are accordingly rejected.

1.   *Claim Rejections - 35 USC § 102*

2.   The following is a quotation of the 1-18 and object to appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

3.   A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamoto et al.

USPN 5960028.

5.   As per claim 7, Okamoto teaches in a chip rate base band <u>receiver</u> processor which

receives digital information containing symbol information, wherein each symbol of the symbol

information is of a predetermined time duration, a method comprising the steps of:

6.   storing the digital information (Okamoto: many components in many figures);

multiplying (Okamoto shows in fig. 69 that correlator has multipliers) a PN code (Okamoto

paragraph 400: "The signal input from an input portion is correlated with the PN code at

correlating portion 531, and output as a correlated signal"; Okamoto teaches that since the

transmitter uses a PN generator, the receiver's correlator has to use the same PN code to receive

the correct message; paragraph 111 "Correlator 137 generates correlated signal AA using

distribution signal ZZ1 correlated with the spread code used at the time of transmission.") with a

first segment, <u>corresponding to a first multi-path</u> (Okamoto fig. 43: first input into 531; fig. 44:

top curve) <u>and</u> representative of the predetermined time duration, of the stored digital

information (Okamoto fig. 44: length of top curve) and multiplying the PN code with a second

segment, <u>corresponding to a second multi-path</u> (Okamoto fig. 43: subsequent input into 531; fig.

44: bottom curve) <u>and</u> representative of the predetermined time duration, of the stored digital

information (Okamoto fig. 44: length of bottom curve).

7.   As per claim 8, Okamoto teaches in a chip rate base band processor which receives

digital information containing symbol information (Okamoto fig. 43), wherein each symbol of

the symbol information is of a predetermined time duration (Okamoto fig. 44a), a method

comprising the steps of: storing the digital information (Okamoto: many components in many

figures); and successively multiplying (Okamoto shows in fig. 69 that correlator has multipliers)

a first PN code (Okamoto paragraph 400: "The signal input from an input portion is correlated

with the PN code at correlating portion 531, and output as a correlated signal"; Okamoto teaches

that since the transmitter uses a PN generator, the receiver's correlator has to use the same PN

code to receive the correct message; paragraph 111 "Correlator 137 generates correlated signal

AA using distribution signal ZZ1 correlated with the spread code used at the time of

transmission.") with a first plurality of segments (Okamoto fig. 43: inputs into 531; fig. 44) of

the stored digital information, wherein each segment corresponds to a different multi-path

(Okamoto fig. 44) is representative of the predetermined time duration (Okamoto fig. 44: length

of curves).

8.   As per claim 9, Okamoto teaches the method of claim 8 further comprising successively

multiplying a pilot PN code (Okamoto shows in fig. 69 that correlator has multipliers; paragraph

400: "The signal input from an input portion is correlated with the PN code at correlating portion

531, and output as a correlated signal"; Okamoto teaches that since the transmitter uses a PN

generator, the receiver's correlator has to use the same PN code to receive the correct message;

paragraph 111 "Correlator 137 generates correlated signal AA using distribution signal ZZ1

correlated with the spread code used at the time of transmission.") with the first plurality of

segments (Okamoto fig. 43: inputs into 531; fig. 44) of the stored digital information (Okamoto:

many components in many figures).

9.   As per claim 10, Okamoto teaches the method of claim 8, wherein the first PN code is a

data code (Okamoto paragraph 312 "Referring to FIG. 30, when signals a2 and a3 are to be

differentiated, control of the window (period T.sub.M of FIG. 30) and maintaining of integration

of PDI are performed by using the signal a1 (preceding the signal a2 by one delay time), which

precedes signals a2 and a3, as a pilot signal."; paragraph 325 "In summary, in the present

embodiment, two or more signals earlier in time are used as pilot signals, ... "; Thus, the data

and pilot codes are being interchanged).

10.   As per claim 11, Okamoto teaches the method of claim 8, wherein the first PN code is a

pilot code (Okamoto paragraph 312 "Referring to FIG. 30, when signals a2 and a3 are to be

differentiated, control of the window (period T.sub.M of FIG. 30) and maintaining of integration

of PDI are performed by using the signal a1 (preceding the signal a2 by one delay time), which

precedes signals a2 and a3, as a pilot signal."; paragraph 325 "In summary, in the present

embodiment, two or more signals earlier in time are used as pilot signals, ... "; Thus, the data

and pilot codes are being interchanged).

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

12.   Claims 12, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Okamoto.

13.   As per claim 12, Okamoto teaches the method of claim 8, further comprising multiplying

a second PN code (Okamoto shows 1 PN code. Okamoto does not show a second PN code. It

would have been obvious to one having ordinary skill in the art at the time the invention was

made to show a second PN code, since it has been held that mere duplication of the essential

working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co.,

193 USPQ 8.) with a second plurality of segments of the stored digital information (Okamoto

fig. 5: P2, D2, 13), wherein each segment is representative of the predetermined time duration

(Okamoto fig. 5: Serial data has been divided into 4 sets of parallel data P1 to P4 and thus there

are different time durations for each).

14.   As per claim 13, Okamoto teaches the method of claim 12, wherein the first PN code and

the second PN code are data PN codes (Okamoto paragraph 312 "Referring to FIG. 30, when

signals a2 and a3 are to be differentiated, control of the window (period T.sub.M of FIG. 30) and

maintaining of integration of PDI are performed by using the signal a1 (preceding the signal a2

by one delay time), which precedes signals a2 and a3, as a pilot signal."; paragraph 325 "In

summary, in the present embodiment, two or more signals earlier in time are used as pilot

signals, ... "; Thus, the data and pilot codes are being interchanged).

15.   As per claim 14, Okamoto teaches the method of claim 13 further comprising:

successively multiplying a first pilot PN code with the first plurality of segments of the stored

digital information; and successively multiplying a second pilot PN code with the second

plurality of segments of the stored digital information (Okamoto discussed above).

Allowable Subject Matter

16.   Claims 1, 2, 3 are allowed.

17.   The following is a statement of reasons for the indication of allowable subject matter:

The art of record does not suggest the respective claim combinations together and nor would the

respective claim combinations be obvious with the underlined portions which are bolded and

italicized:

18.   As per claim 1, Murai teaches a chip rate base band processor which receives digital

information containing symbol information and provides a symbol output, comprising:

19.   an input memory which stores the digital information (Murai fig. 2: inherent for the RX

baseband signal to be stored);

20.   a data PN code buffer (Murai fig. 2: 204);

21.   a pilot PN code buffer (Murai fig. 2: 204 with 205);

22.   to a pilot multiplier having a first input coupled to the pilot PN code buffer, a second

input coupled to the input memory, and an output (Murai fig. 2: multiplier in 202);

23.   a data multiplier having a first input coupled to the data PN code buffer, a second input

coupled to the input memory, and an output (Murai fig. 2: multiplier in 201);

24.   a pilot ~~accumulator~~ correlator having an input coupled to the output of the first multiplier,

and an output (Murai fig. 2: integration inside 202);

25.   a pilot memory coupled to the ~~first accumulator~~ (rejected with 112; Murai fig. 2: selector

inside 212 is inherently a memory) pilot correlator;

26.   a channel estimator coupled to the pilot memory (Murai fig. 5: 226);

27.   ***a peak detector coupled to the pilot memory (not in Murai)***;

28.   a data ~~accumulator~~ correlator coupled to the data multiplier;

29.   load controller having a first input coupled to the peak detector, a second input coupled to

data ~~accumulator~~ correlator, and an output;

30.   a data memory coupled to the load controller;

31.   a phase rotator having a first input coupled to the channel estimator, a second input

coupled to the data memory, and an output; and

32.   a symbol combiner having an input coupled to the phase rotator, and an output which

provides the symbol output.

33.   Since claims 2 and 3 depend on claim 1, claims 2 and 3 are also allowed.

Conclusion

34.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Pankaj Kumar whose telephone number is (703) 305-0194. The

examiner can normally be reached on Monday through Thursday after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi H. Pham can be reached on (703) 305-4378. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 872-9314 for regular

communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3800.

PK
June 5, 2003

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 6/9/03